SEQUENCE LISTING



<110> Dixon, Richard A. Xia, Yiji Lamb, Christopher

<120> CONSTITUTIVE DISEASE RESISITANCE (CDR1)
GENE AND METHODS OF USE THEREOF

<130> SALK2820-1

<140> 09/353,332 <141> 1999-07-14

<150> 60/092,696

<151> 1998-07-14

<160> 3

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 4839

<212> DNA

<213> Arabidopsis thaliana

<220>

<221> CDS

<222> (1111) . . . (2421)

<400> 1

10

ggacattett ggtetaetee aagaatatea aagateeagt eteagaagae eagagggeta 60 ttgagacttt tcaacaaagg gtaatatcgg gaaacctcct cggattccat tgcccagcta 120 tctgtcactt catcgaaagg acagtagaaa aggaagatgg cttctacaaa tgccatcatt 180 gcgataaagg aaaggctatc gttcaagatg cctctaccga cagtggtccc aaagatggac 240 ccccacccac gaggaacatc gtggaaaaag aagacgttcc aaccacgtct tcaaagcaag 300 360 ttgtgatgtt tctcttaaat taaaaattta tgactatata tatgacaata tatatata 420 tatatatata tatatacatt attgagatag ataatgaata cattagttta tcattaaatt 480 taataggtac tgatcttcaa attattttca aacgattctc tgtcaatttc ttgatatttt 540 600 taaactaaaa tccatttttt aaaaaataga ctgatttaac aaacattaaa agttaattgt ttctgtacat gccacggatc gaaaatgagt cagtaaatga atatttttta cctaaagtca 660 cacattgtat atacctaagt aaatgataca gaccaaaatt agaagatcaa gaatccttat 720 attacgaaaa tatccggtta cattcgttga atactttaat gaagaatcta ggatataatt 780 840 ataaacacgt ccatatgaat gaatggtaca ctcctcgtaa ataaataaat atatgcatca 900 aaatgagaaa atcttcactt ttatttattc ttaatacgtc agattctctg aacacaaaat 960 gatataattt gtagataact tactcaaaac gtaagaactc actatctatt atcatttatt 1020 aaccaccatc tcattaatct tataaatatg tactcattag attgtcaaaa gtaaaacctc 1080 acaatacact ttaaactaca aatcaaaaca atg gcc tct cta ttc tct tca gtt 1134 Met Ala Ser Leu Phe Ser Ser Val 1

ctc ttg tct ctt tgt tta ctc tct tca ctt ttt ctc tca aat gca aac Leu Leu Ser Leu Cys Leu Leu Ser Ser Leu Phe Leu Ser Asn Ala Asn

15

gct aag cca aaa cta ggc ttc acc gcg gat cta atc cac cgt gat tct

20

1182

1230

Ala Lys Pro Lys Leu Gly Phe Thr Ala Asp Leu Ile His Arg Asp Ser 25 30 35 40

Ala 25	Lys	Pro	Lys	Leu	Gly 30	Phe	Thr	Ala	Asp	Leu 35	Ile	His	Arg	Asp	Ser 40	
												tcc Ser				1278
cga Arg	aac Asn	gcg Ala	atc Ile 60	cac His	cga Arg	tcc Ser	gtt Val	aac Asn 65	cgt Arg	gtt Val	ttc Phe	cat His	ttc Phe 70	act Thr	gaa Glu	1326
												tca Ser 85				1374
												ttc Phe				1422
												cag Gln				1470
												gac Asp				1518
												caa Gln				1566
												act Thr 165				1614
												aac Asn				1662
gat Asp 185	Thr	tta Leu	acg Thr	ctc Leu	ggc Gly 190	tcc Ser	agc Ser	gat Asp	acc Thr	cgc Arg 195	cct Pro	atg Met	cag Gln	ctt Leu	aag Lys 200	1710
aat Asn	att Ile	att Ile	atc Ile	ggt Gly 205	Cys	ggt Gly	cac His	aac Asn	aac Asn 210	gct Ala	gga Gly	acg Thr	ttt Phe	aac Asn 215	aag Lys	1758
aaa Lys	ggc Gly	tct Ser	gga Gly 220	Ile	gtc Val	gga Gly	cta Leu	ggt Gly 225	Gly	ggt Gly	ccg Pro	gtt Val	tcg Ser 230	Leu	atc Ile	1806
aag Lys	caa Gln	ctt Leu 235	Gly	gac Asp	tcc Ser	atc Ile	gac Asp 240	Gly	aaa Lys	ttc Phe	tca Ser	tac Tyr 245	Cys	ttg Leu	gtt Val	1854
Pro	cta Leu 250	Thr	tcc Ser	aaa Lys	aag Lys	gat Asp 255	Gln	acg Thr	agt Ser	aaa Lys	ato Ile 260		ttc Phe	gga Gly	acc Thr	1902
aat	gcc	ato	gtg	tcg	gga	tca	gga	gtt	gto	tca	act	cct	ctg	ato	gca	1950

•					4					_						06
Asn 265	Ala	Ile	Val	Ser	Gly 270	ser	Gly	Val	Val	3 Ser 275	Thr	Pro	Leu	Ile	Ala 280	$\mathbb{C}\mathbb{C}$
aag Lys	gcg Ala	tct Ser	Gln	gag Glu 285	acc Thr	ttc Phe	tat Tyr	tac Tyr	cta Leu 290	acc Thr	cta Leu	aaa Lys	tcc Ser	att Ile 295	agc Ser	1998
	gga Gly															2046
	gga Gly															2094
act Thr	gaa Glu 330	ttt Phe	tac Tyr	tcc Ser	gag Glu	ctc Leu 335	gag Glu	gat Asp	gcg Ala	gtt Val	gca Ala 340	tcc Ser	tct Ser	atc Ile	gat Asp	2142
gct Ala 345	gag Glu	aag Lys	aag Lys	caa Gln	gat Asp 350	cca Pro	caa Gln	agc Ser	ggt Gly	ttg Leu 355	agt Ser	cta Leu	tgt Cys	tac Tyr	agt Ser 360	2190
gca Ala	acc Thr	gga Gly	gat Asp	cta Leu 365	aaa Lys	gtt Val	cca Pro	gtc Val	att Ile 370	act Thr	atg Met	cat His	ttt Phe	gat Asp 375	gga Gly	2238
gcc Ala	gat Asp	gtg Val	aag Lys 380	ctt Leu	gac Asp	tcc Ser	tcc Ser	aat Asn 385	gcc Ala	ttt Phe	gta Val	caa Gln	gtc Val 390	tcg Ser	gag Glu	2286
gat Asp	ttg Leu	gtt Val 395	Cys	ttt Phe	gcc Ala	ttc Phe	cgc Arg 400	gga Gly	agc Ser	ccg Pro	agt Ser	ttc Phe 405	Ser	ata Ile	tac Tyr	2334
ggt Gly	aat Asn 410	Val	gcg Ala	cag Gln	atg Met	aac Asn 415	Phe	ctt Leu	gtt Val	gga Gly	tac Tyr 420	gac Asp	act Thr	gtt Val	tcc Ser	2382
aaa Lys 425	acg Thr	gtg Val	tca Ser	ttt Phe	aag Lys 430	Pro	aca Thr	gat Asp	tgt Cys	gca Ala 435	Lys	atg Met	tag	ttgt	ttc	2431
ato	tcaa	cat	gttt	ttca	aa a	ttgt	gttt	t ca	atta	caat	aat	ggct	gat	ttag	tttca	g 2491
															gagag	
															aatca	
ttt	tagt:	tta	taat	cato	tc t	atga	tqta	a ac	caaa	tatg	aca	agac	aat	tcta	taatt	_
tgt	tcaa	aat	ttag	tttt	tt t	tttc	attt	t ac	taat	aaaa	tct	agaa	ıata	ctac	ttttg	t 2791
gto	tatt	ata	ttat	tgtg	at g	aaat	actt	a ta	agaa	acag	atg	raatg	rtga	ttct	aattc	a 2851
ata	ttgc	ttt	taag	gaat	ta t	attg	gtcc	t ac	tatt	ctat	. ttt	gatg	ata	ctat	tattt: tattt	t 2911 a 2971
taa	.acac lataa	ttc	aatt	aqtt	tt t	ctto	ttaa	g tt	tctt	ataa	aaa	ataa	ata	tato	ttata	a 3031
gaa	ataa	ata	tatt	ttat	at t	tcat	aaaa	a to	atac	cattg	tac	atat	cta	ggtg	gatga	t 3091
aca	tggc	cta	aatt	agat	ca t	gaat	cata	a aa	atco	cagct	gta	gata	aaac	ataa	caagg	a 3151 a 3211
tga	atgg	cac	aato	ctgg	jtc a	aaaa	iaaat ittt=	a aa it ca	iaggā igatt	idaag Cotiot	, LLE : AAA	icacç	aat	gaca	atgag acaatt	
qta	agata	att	tact	aaaa	at o	taac	aato	t ca	atcat	gtac	tac	catt	tat	gaat	cctta	t 3331
CCa	aattg	racc	ttat	:aaat	at t	acto	atca	ıg at	tgt	caaaa	a gta	aaaaa	actg	acca	attcag	g 3391
caa	atcac	tta	aact	cacaa	atc t	aaga	aaat	g go	cctct	ctat	tca	actto	cact	tct	cttgtc	t 3451

4839

ctatetttat tetettetee tattttetea aaegeaaaeg ceaaaceaaa actaggette accgcggatc tgatccaccg cgattctcct aaatcgccat tctataaccc ggcggaaacc 3571 ccttcccaac gtatgagaaa cgctatccac cgatccttta accgtgcttc ccatttcagt 3631 aatctttttg aaaaggatgc atcacttaac gcaccacaaa ctgatatcac caaatatttc 3691 ggtatatatc ttatgaacgt atcccttggg agttgggaca cctcccgtcc caatcatggc 3751 ggccgctgac accggaagtg atctcatctg gacgcagtgc aaaccatgcg atgattgtta 3811 cactcaagtt gatcctctct ttgaccctaa agcgtcttcc acatacaaag acgtttcttg 3871 cccctcaagc caatgtaggg ctctaaaaga tgatgcttct tgttccaaaa aagacaacac 3931 ttgctcttac tcaatgaatt acggggataa ctcatactca cggggtaatg tcgctgtgga 3991 taccttaacg ctcggctcca ccgataaccg tccggtgcag gttaagaata ttatcatcgg 4051 ttgtggtcac gaaaacgctg taacatttag aaacaagagc tctggaatcg ttggacttgg 4111 tggtggtgcg gtttcgctcg ttaaacaact cggagactcc atcgaaggta aattctcata 4171 ctqcttgqta cctgaaaatg atcaaacgag caagattagt ttcggaacca atgcggttgt 4231 qtcqqqaccq qqaactqtct caactccttt qgtcqtqaaq tctccaqaqa ccttctattt 4291 totaaccota aaatotatta cogtgggaag caagaatatg ccaaccocag gototgatat 4351 caagggaaac atggtcatcg attcgggcac aactctaact ctgttacctg ggaaatatta 4411 tttccagatt gagagtgctg ttgcgtcttt aatcgatgca gagaggtcga aagatgaaag 4471 aateggtteg agtetttgat acaatgeaac egeagatetg aaagteecag teattactat 4531 qcatttcqat qqaqcagatg tgaagcttga ttcctataat tcatttttta aagtctcaga 4591 tgatttggtt tgctttgcct ttggcttgaa cttgattacg agggatggga tatacgggaa 4651 tgtggcgcag aagaactttc ttgttggata cgacactgtt tccaaatcgt tgtcatttaa 4711 aaaaacagat tgtgcaaaga tgtagatggt tcagcttagc atgtggctaa tttccttttt 4771 tcaaaagtat gttttcagtt atcattatgg ctgatttgat tttagcctta aaatagttat 4831

<210> 2 <211> 437 <212> PRT <213> Arabidopsis thaliana

ttgaattc

<400> 2 Met Ala Ser Leu Phe Ser Ser Val Leu Leu Ser Leu Cys Leu Leu Ser 10 Ser Leu Phe Leu Ser Asn Ala Asn Ala Lys Pro Lys Leu Gly Phe Thr . 30 25 Ala Asp Leu Ile His Arg Asp Ser Pro Lys Ser Pro Phe Tyr Asn Pro Met Glu Thr Ser Ser Gln Arg Leu Arg Asn Ala Ile His Arg Ser Val 55 60 Asn Arg Val Phe His Phe Thr Glu Lys Asp Asn Thr Pro Gln Pro Gln 70 Ile Asp Leu Thr Ser Asn Ser Gly Glu Tyr Leu Met Asn Val Ser Ile 90 Gly Thr Pro Pro Phe Pro Ile Met Ala Ile Ala Asp Thr Gly Ser Asp 105 110 Leu Leu Trp Thr Gln Cys Ala Pro Cys Asp Asp Cys Tyr Thr Gln Val 120 125 Asp Pro Leu Phe Asp Pro Lys Thr Ser Ser Thr Tyr Lys Asp Val Ser 135 Cys Ser Ser Ser Gln Cys Thr Ala Leu Glu Asn Gln Ala Ser Cys Ser 150 160 Thr Asn Asp Asn Thr Cys Ser Tyr Ser Leu Ser Tyr Gly Asp Asn Ser 170 165 Tyr Thr Lys Gly Asn Ile Ala Val Asp Thr Leu Thr Leu Gly Ser Ser 185 180 Asp Thr Arg Pro Met Gln Leu Lys Asn Ile Ile Ile Gly Cys Gly His 200 205 Asn Asn Ala Gly Thr Phe Asn Lys Lys Gly Ser Gly Ile Val Gly Leu 215 Gly Gly Gro Val Ser Leu Ile Lys Gln Leu Gly Asp Ser Ile Asp

					1	i.				5			,		1
225					230					235					240
				245					250				Lys	255	
Thr	Ser	Lys	Ile 260	Asn	Phe	Gly	Thr	Asn 265	Ala	Ile	Val	Ser	Gly 270	Ser	Gly
		275					280					285	Thr		
	290					295					300		Ile		
305					310					315			Ile		320
				325					330				Glu	335	
			340					345					Asp 350		
		355					360					365	Lys		
	370					375					380		Asp		
385					390					395			Ala		400
				405					410				Met	415	
Leu	Val	Gly	Tyr 420	Asp	Thr	Val	Ser	Lys 425		Val	Ser	Phe	Lys 430	Pro	Thr
Asp	Cys	Ala 435	Lys	Met											•
<21	0> 3														
<21	1> 1	4													
	2> P														
<21	3> A	rtif	icia	l Se	quen	ce									
<22 <22		ynth	etic	pep	tide	uti	lize	d fo	r an	tibo	dy				
	p	rodu	ctio	n; s	egme	nt o	f SE	Q ID	NO:	2					
	0 > 3				_		_	_,	_	-	ml	. 7	a		
Asp 1	Thr	Val	Ser	Lys 5	Thr	· Val	ser	Pne	10	Pro	THE	Asp	Cys		